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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/564,427	02/01/2006	Manfred Bick	DNAG-313	8861
24972	7590	08/05/2011		
FULBRIGHT & JAWORSKI, LLP 666 FIFTH AVE NEW YORK, NY 10103-3198			EXAMINER ZHU, WEIPING	
			ART UNIT	PAPER NUMBER
			1734	
			NOTIFICATION DATE	DELIVERY MODE
			08/05/2011	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

nyipdocket@fulbright.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/564,427	<b>Applicant(s)</b> BICK ET AL.	
	<b>Examiner</b> WEIPING ZHU	<b>Art Unit</b> 1734	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2011.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 22-54 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 22-54 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Status of Claims***

1. Claims 22-54 are currently under examination, wherein no claim has been amended in applicant's amendment filed on May 19, 2011.

### ***Status of Previous Rejections***

2. The previous rejections of claims 22-54 under 35 U.S.C. 103(a) as stated in the Office action dated January 20, 2011 are maintained as follows:

### ***Claim Objections***

3. Claim 50 is objected to because of the following informalities:

The "n" in line 1 of claim 50 should be deleted.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the fourth paragraph of 35 U.S.C. 112:

Subject to the [fifth paragraph of 35 U.S.C. 112], a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

4. Claim 38 and 39 are rejected under 35 U.S.C. 112, 4th paragraph, as being of improper dependent form for failing to further limit the subject matter of the claim upon which it depends, or for failing to include all the limitations of the claim upon which it depends.

The limitations of "a compound" and "a reducing agent" in claim 38 fail to further limit "an oxide" and "solid magnesium metal" in claim 22 from which claim 38 depends, rendering claim 38 and its dependent claim 39 improper dependent claims.

Applicant may cancel the claim(s), amend the claim(s) to place the claim(s) in proper dependent form, rewrite the claim(s) in independent form, or present a sufficient showing that the dependent claim(s) complies with the statutory requirements.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 22-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shekhter et al. (US 6,558,447 B1).

With respect to claims 22-28, 43 and 49-54, Shekhter et al. ('447 B1) discloses a process for preparing a metal powder comprising (col. 2, line 37 to col. 3, line 44, col. 3, line 66 to col. 4, line 8, col. 6, line 37 to col. 7, line 27, col. 15, lines 25-65 and col. 18, lines 28-52) mixing an oxide of selected metal(s) including Zr and Ti with a reducing agent comprising solid magnesium metal and heating the mixture in an oven to 850-1500°C, optionally under an atmosphere of hydrogen until a reduction starts; leaching the reaction product; and washing and drying the resultant product to yield the metal powder, wherein the oxide have mean particle size of 1.7-7.3 microns, a BET specific surface area of 0.36-20 m<sup>2</sup>/g and a minimum content of 99 wt. %. The heating temperature, the oxide particle size, the oxide BET specific surface area and the oxide content of Shekhter et al. ('447 B1) overlap the claimed ranges in claim 23; claims 22,

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24 and 43; claims 22, 25 and 26; and claims 22, 27, 28 and 40 respectively. A prima facie case of obviousness exists. See MPEP 2144.05 I.

With respect to claims 29-34, Shekhter et al. ('447 B1) discloses the impurity levels of Fe and Al, Si, Na, P in the oxide are less than 19 ppm, less than 7 ppm, less than 11 ppm, and negligible ppm respectively (col. 15, lines 25-40), which would read on the claimed ranges respectively.

With respect to claims 35 and 36, Shekhter et al. ('447 B1) does not disclose the features. However, it has been well held where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes; a prima facie case of either anticipation or obviousness has been established. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977), MPEP 2112.01 [R-3] I. In the instant case, the claimed and Shekhter et al. ('447 B1)'s oxides are identical or substantially identical in composition and are produced by identical or substantially identical processes, therefore a prima facie case of obviousness exists. The same loss on ignition of the oxide at 1000°C as constant weight and the same tamped down bulk density would be expected in the oxide of Shekhter et al. ('447 B1) as in the claimed oxide.

With respect to claim 37, Shekhter et al. ('447 B1) does not disclose replacing the oxide by an additive of up to 15 wt. % of the oxide as claimed. However, the 0 wt. % of the low limit of the additive does not require the presence of the additive. Therefore, the oxide of Shekhter et al. ('447 B1) still meets the claim limitation.

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With respect to claims 38-40, Shekhter et al. ('447 B1) discloses pure Mg metal was used as the reducing agent in an amount 1.1 times the stoichiometric amount with respect to the oxygen content of the suboxide (col. 15, lines 50-53), which would read on the claimed content.

With respect to claim 41, Shekhter et al. ('447 B1) discloses the reaction is performed under an argon protective gas (col. 15, lines 55-60).

With respect to claim 42, Shekhter et al. ('447 B1) discloses the reaction product is leached with diluted mineral acid (col. 11, lines 40-51), which includes the claimed hydrochloric acid.

With respect to claim 44, the teachings of Shekhter et al. ('447 B1) regarding the product property limitations in the instant claim 22 as discussed above are further applied properly herein. Shekhter et al. ('447 B1) further discloses that the process can be applied to produce or co-produce metal powders comprising Ti, Zr, Hf and V (col. 3, line 66 to col. 4, line 8 and col. 20, lines 16-26).

With respect to claim 45, the teachings of Shekhter et al. ('447 B1) regarding the limitations in the instant claim 22 as discussed above are properly applied. Shekhter et al. ('447 B1) further teaches mixing an oxide powder of Nb and/or Ta with finely divided powders of reducing metals or metal hydrides (col. 7, lines 3-12) without limiting the order of the mixing. It would have been obvious to one of ordinary skill in the art at the time the invention was made to sequentially mixing an oxide of at least one of Nb and Ta with a reducing agent as claimed with expected success, because Shekhter et al. ('447 B1) teaches the same utility for any orders of mixing. See MPEP 2144.05 I.

With respect to claims 46-48, the teachings of Shekhter et al. ('447 B1) regarding the limitations in the instant claim 22, 44 and 45 as discussed above are properly applied. Even though the process for preparing a metal powder as disclosed by Shekhter et al. ('447 B1) may include one or more additional steps, the step(s) are utilized for particular applications. The process of Shekhter et al. ('447 B1) still can be viewed as consisting of the claimed 4 steps as evidenced by the claims 24, 26 and 48 of Shekhter et al. ('447 B1).

### ***Response to Arguments***

6. The applicant's arguments filed on May 19, 2011 have been fully considered but they are not persuasive.

First, the applicant argues that Shekhter et al. ('447 B1) provides no hints or suggestions as to how the instantly claimed properties could be reached. In response, the examiner notes that the process for preparing a metal powder and the properties of the produced powder disclosed by Shekhter et al. ('447 B1) meet all the process and property limitations as instantly claimed as discussed above.

Second, the applicant argues that Shekhter et al. ('447 B1) uses gaseous magnesium for the reductions of oxides of Nb, Ta, W, Zr and V only and solid reducing agents are not contemplated by Shekhter et al. ('447 B1). In response, the examiner notes that Shekhter et al. ('447 B1) discloses that the process as disclosed can be applied to produce or co-produce metal powders comprising Ti and Zr (col. 3, line 66 to col. 4, line 8), indicating clearly that the oxides of Ti and Zr can be reduced by the process of Shekhter et al. ('447 B1). Shekhter et al. ('447 B1) discloses reducing Ta and

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Nb oxides with magnesium in gaseous form to eliminate prior art problems resulted from reducing a large quantity of Ta oxides using solid Mg metal as reductant (col. 3, lines 31-61). However, Shekhter et al. ('447 B1) does not exclude using solid Mg metal as reductant. On the contrary, Shekhter et al. ('447 B1) does disclose using solid Mg metal as reductant (col. 7, lines 3-12, col. 15, lines 25-65 and col. 18, lines 28-52). The rejection of the limitation of using solid Mg metal as reductant as instantly claimed was based on the prior art's broad disclosure rather than preferred embodiments. See MPEP 2123.

### ***Conclusion***

7. This Office action is made non-final. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Weiping Zhu whose telephone number is 571-272-6725. The examiner can normally be reached on 8:30-16:30 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Emily Le can be reached on 571-272-0903. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Weiping Zhu/  
Examiner, Art Unit 1734

/Emily M Le/  
Supervisory Patent Examiner, Art Unit 1734  
7/19/2011